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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,577	09/22/2005	Shinji Hayashi	37569-412500	1319
27717 7590 08/04/2008 SEYFARTH SHAW LLP 131 S. DEARBORN ST., SUITE 2400 CHICAGO, IL 60603-5803				
EXAMINER BERMAN, SUSAN W				
ART UNIT		PAPER NUMBER		
1796				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/550,577

**Applicant(s)**

HAYASHI ET AL.

**Examiner**

/Susan W. Berman/

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 May 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.  
4a) Of the above claim(s) 3-18 and 33-40 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,2 and 19-32 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 22 September 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/SB08)  
Paper No(s)/Mail Date 2-22-07 4-30-08  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### ***Election/Restrictions***

Applicant's election of Group II, claims 1, 2, 19-32 in the reply filed on 5-23-2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 3-18 and 33-40 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention.

### ***Drawings***

Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance. See pages 2-4 of the specification.

### ***Claim Objections***

Claims 19, 21-30 and 32 are objected to because of the following informalities: the amended claims should be identified as amended using status identifiers. Appropriate correction is required. It is noted that the non-elected amended claims should be so identified also. Applicant should submit a substitute copy of the amended claims submitted 9-22-2005. In claim 30, it is believed that the line 1 word "substrata" should be "substrate".

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2 and 19-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The definition of copolymer (a) in the claims fail to clearly recite that the “photocurable functional group” is an ethylenically unsaturated group. The recitation “are linked at least” in claim 1 definition of copolymer (a) raises the issue of whether the acid group and the photocurable group are bonded (“linked”) or whether applicant intends to set forth different monomer units copolymerized to form the copolymer. The phrase “photocurable groups” in the definition of photocurable compound ( c ) does not set forth what kind of photocurable group(s) is/are suitable or whether only one kind of photocurable group is present or more than one kind of photocurable group is present.

There is no antecedent basis in claim 19 for the recitation in claim 21. Claim 21 should be dependent from claim 20. With respect to claim 24, it is not clear whether the phrase within parentheses is intended to be a positive recitation in the claim. It is suggested that the claim recite “elastic deformation modulus against... after curing wherein the elastic deformation amount is defined as 100 X elastic deformation amount/ total deformation”. There is no antecedent basis in claim 19 for the recitation including compound ( c ) and compound (d) in claim 27. Claim 27 should depend from claim 25.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al (6,410,206) in view of Sakurai et al (6,013,415). Ueda et al disclose the invention as claimed in Claims 1 and 2 except for photocurable compound ( c ). The photocurable compound taught has three or more photocurable groups but no acidic functional group.

Sakurai et al teach analogous compositions wherein the polyfunctional monomer can be a monomer having at least three photocurable functional groups or at least three photocurable groups and an acidic functional group (column 6, line 43, to column 7, line 35). Sakurai et al teach that the polyfunctional monomer enhances pixel strength, pixel surface smoothness and hardly produce film stains or residues on a substrate of a color filter.

It would have been obvious to one skilled in the art at the time of the invention to substitute or add a photocurable monomer of formula (2) taught by Sakurai et al in analogous compositions as the monomer in the compositions disclosed by Ueda et al. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of providing a useful composition for producing a color filter having the enhanced properties taught by Sakurai et al.

Claims 1, 2 and 19-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-116538 in view of Sakurai et al (6,013,415). JP '538 discloses the invention as claimed except for photocurable compound ( c ). See the claims and paragraphs [0006] to [0035], [0071] to [0076], [0078] to [0081], [0092] The photocurable compound taught has three or more photocurable groups but no acidic functional group.

Sakurai et al teach analogous compositions wherein the polyfunctional monomer can be a monomer having at least three photocurable functional groups or at least three photocurable groups and an acidic functional group (column 6, line 43, to column 7, line 35). Sakurai et al teach that the polyfunctional monomer enhances pixel strength, pixel surface smoothness and hardly produce film stains or residues on a substrate of a color filter.

It would have been obvious to one skilled in the art at the time of the invention to substitute or add a photocurable monomer of formula (2) taught by Sakurai et al in analogous compositions as the polyfunctional monomer in the compositions disclosed by JP '538. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of providing a useful composition for producing a color filter having the enhanced properties taught by Sakurai et al. With respect to claim 24, the recited modulus would be expected to be obtained by the compositions taught by combination of the teachings of JP '538 and Sakurai et al, in the absence of evidence to the contrary.

Claims 1, 2 and 19-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai et al (6,013,415) in view of Okazaki et al (WO 01/72858 or 6,730,763). Sakurai et al disclose radiation sensitive compositions comprising an alkali-soluble resin, a polyfunctional

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monomer and a photoinitiator. Alkali-soluble resins obtained from ethylenically unsaturated carboxyl group-containing monomer and copolymerizable mono-vinyl monomers. Sakurai et al teach compositions wherein the polyfunctional monomer can be a monomer having at least three photocurable functional groups or at least three photocurable groups and an acidic functional group (column 6, line 43, to column 7, line 35). Sakurai et al teach that the polyfunctional monomer enhances pixel strength, pixel surface smoothness and hardly produce film stains or residues on a substrate of a color filter. Photoinitiators having tertiary amine groups are disclosed in column 9, lines 55-65, column 10, lines 11-13, and lines 49-55.

Okazaki et al disclose copolymers having maleimide or succinimide functional groups that crosslink by UV triggered dimerization and provide high weather resistance. Copolymerizable monomers for obtaining the copolymers include carboxyl group-containing (meth)acrylates. See columns 2-4 and column 6, lines 43-59, column 7, line 57, to column 8, line 11.

It would have been obvious to one skilled in the art at the time of the invention to substitute the copolymers taught by Okazaki et al for the copolymers in the analogous compositions taught by Sakurai et al. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of providing a useful composition for producing a color filter having the enhanced properties taught by Sakurai et al and improved weather resistance in a protective coating, as taught by Okazaki et al. With respect to claims 24 and 31, the recited modulus would be expected to be obtained by the compositions taught by combination of the teachings of Sakurai et al and Okazaki et al, in the absence of evidence to the contrary.

Claims 1, 2 and 19-32 are rejected under 35 U.S.C. 103(a) as being obvious over Hayashi et al (7,399,574) in view of Sakurai et al (6,013,415). Hayashi et al disclose curable resin compositions for color filters comprising an alkali soluble binder, photoinitiator and photocurable compound set forth in the instant claims. The difference is that Hayashi et al '574 does not set forth a photocurable compound having an acidic functional group and at least three photocurable functional groups. Monomers having at least three photocurable functional groups, such as dipentaerythritol pentaacrylate, are examples of the disclosed monomers.

Sakurai et al teach analogous compositions wherein the polyfunctional monomer can be a monomer having at least three photocurable functional groups or at least three photocurable groups and an acidic functional group (column 6, line 43, to column 7, line 24).

It would have been obvious to one skilled in the art at the time of the invention to substitute or add a photocurable monomer of formula (2) taught by Sakurai et al in analogous compositions as the monomer in the compositions claimed in US '574. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of providing a useful composition for producing a color filter, as taught by Sakurai et al.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter



disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2 and 19-32 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 7-22 of U.S. Patent No. 7,399,574 in view of

Sakurai et al (6,013,415). Although the conflicting claims are not identical, they are not patentably distinct from each other because the comprising language of the claimed resin composition encompasses the photoinitiator and photocurable compound set forth in the instant claims. Furthermore, claims 12-16 of '574 recite a photopolymerizable compound and a photoinitiator. The claims do not set forth a photoinitiator having a tertiary amine structure; however, the examples disclose that the claimed photoinitiators are exemplified by photoinitiators having tertiary amine groups. The difference is that the claims of US '574 do not set forth a photocurable compound having an acidic functional group and at least three photocurable functional groups. Monomers having at least three photocurable functional groups, such as dipentaerythritol pentaacrylate, are examples of the claimed monomers. Sakurai et al teach analogous compositions wherein the polyfunctional monomer can be a monomer having at least three photocurable functional groups or at least three photocurable groups and an acidic functional group (column 6, line 43, to column 7, line 24). It would have been obvious to one skilled in the art at the time of the invention to substitute or add a photocurable monomer of formula (2) taught by Sakurai et al in analogous compositions as the monomer in the compositions claimed in US '574. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of providing a useful composition for producing a color filter, as taught by Sakurai et al.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Long, II et al (5,319,101) disclose radiation curable polymers derived from reactive imide monomers that crosslink by 2 + 2 cycloaddition upon irradiation. Column 8, line 17, to column 9, line 23, column 10, lines 6-9,

The following references disclose compositions for color filters: Hirayama et al (6,028,123), Itano et al (6,120,973), Sakurai et al (6,140,019), Shimada et al (6,255,034).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Susan W. Berman/ whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB  
7/16/2008

/Susan W Berman/  
Primary Examiner  
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